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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,782	08/19/2003	Fung-Chao Tu	BHT-3098-159	8195

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TROXELL LAW OFFICE PLLC
5205 LEESBURG PIKE, SUITE 1404
FALLS CHURCH, VA 22041

EXAMINER

YABUT, DIANE D

ART UNIT	PAPER NUMBER
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3734

MAIL DATE	DELIVERY MODE
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01/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/642,782

Applicant(s)

TU, FUNG-CHAO

Examiner

Diane Yabut

Art Unit

3734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/29/2007 has been entered.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3-16, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nichols** (U.S. Patent No. **5,843,099**) in view of **Yoon '949** (U.S. Patent No. **5,542,949**), **Burbank** (U.S. Patent No. **6,635,065**), **Yoon '112** (U.S. Patent No. **5,728,112**), **Blocher** (U.S. Patent No. **6,520,960**), and **Geiges, Jr.** (U.S. Patent No. **5,830,231**).

Claims 1, 6, and 23: Nichols discloses a ligature forceps body having a fixed handle **20** and a movable handle **22** pivotally connected with rear side of the fixed handle, whereby the movable handle is movable between open and closed positions relative to the fixed handle, a barrel **12** forward extending from the fixed handle, a first link **32** fitted in the barrel and slidable along the barrel, a rear end of the first link being pivotally connected with the movable handle and drivingly displaceable by the moving handle, and a forceps mouth with upper and lower jaws **58, 64**, wherein when the movable handle is located in the closed position, the movable handle moves the upper jaws into the closed position relative to the lower jaws (Figures 1, 4-5).

Nichols discloses the claimed device, including the jaws being fixedly disposed at the front end of the barrel, the rear end of the upper jaw being pivotally connected with the rear end of the lower jaw, whereby the upper jaw is movable between open and closed positions relative to the lower jaw, the front end of the first link being pivotally connected with the rear end of the lower jaw, whereby when the first link is moved, the upper jaw is driven and angularly displaced. However, Nichols does not expressly disclose a second link fitted in a barrel and slidable along the barrel, the second link being manually pushable, a blade being fixedly disposed at front end of the second link and positioned in the barrel, a press unit disposed on the forceps body and manually pressable to move between a pulled position and a not pulled position, a pull ring fitted around the barrel and movable along the barrel, two first tracking members, two second tracking members and a third tracking member all disposed in the barrel and slidable within the barrel, rear ends of the two first tracking members being fixed with the pull

ring, forceps mouth having two side by side arranged lower jaws and two side by side arranged upper jaws which are spaced by a certain gap, and having a circumferential groove extending around a periphery thereof and communicating with the upper gap, two small blades disposed at rear ends of the two lower jaws in certain positions, and a pull member, a middle of the pull member being connected with front end of the third tracking member.

Yoon '949 teaches a forceps instrument with a second link **56'** fitted in a barrel **89'** and slidable along the barrel the second link being manually pushable, a blade **159'** being fixedly disposed at front end of the second link and positioned in the barrel, wherein the second link controlling a movement of the blade and moving the blade between a front end of the barrel and a retracted position within the barrel, when the second link is moved forward, the second link moving the blade toward the front end of the barrel, the blade extending through the gap between the upper and lower jaws **46'**, **48'** and protrudes from the front end of the forceps mouth when the second link is moved forward (Figure 9, col. 3, lines 30-32, col. 4, lines 65-67 to col. 5, lines 1-3, and col. 7, lines 39-57). It would have been obvious to one of ordinary skill in the art at the time of invention to provide a second link slidable blade member, as taught by Yoon '949, to Nichols since it was known in the art that a blade within a ligating instrument eliminates the need for an additional cutting instrument and offers multi-functionality and simplicity for the surgeon.

Burbank teaches a suture ligation device with a pull ring **102** fitted around a barrel and movable along the barrel, two first tracking members **120,122** disposed in the

barrel and slidable within the barrel, rear ends of the two first tracking members being fixed with the pull ring, whereby when pulling the pull ring toward the rear end of the barrel, the two first tracking members are driven and moved rearward, when the pulling is moved rearwardly, the pull ring retracting the two first tracking members into the barrel (Figures 1, 2, 7, and 14). It would have been obvious to one of ordinary skill in the art at the time of invention to provide a pull ring, as taught by Burbank, to Nichols since it was known in the art that the pull ring structure is common and offers comfort and ergonomic benefits to the surgeon when manipulating ligature in the device surgery.

Yoon '112 teaches having two lower jaws (on **34**) located side by side and two upper jaws (on **28**) located side by side, the two lower jaws being spaced apart forming a lower gap **52** located there between, and the two upper jaws being spaced apart forming an upper gap **96** located there between, each of the two upper jaws having a circumferential groove **86** extending around a periphery thereof and communicating with the upper gap (Figure 13). It would have been obvious to one of ordinary skill in the art at the time of invention to provide two upper jaws having a circumferential groove and two lower jaws, as taught by Yoon '112, since it was known in the art that more grasping force and surface area is covered in using multiple jaws to manipulate tissue before cutting and suturing, and also having a circumferential groove prevents suture material from inadvertently falling out (col. 3, lines 10-31).

Blocher teaches two small blades **56**, **60** disposed at rear ends of two lower jaws in certain positions (Figures 1-6). It would have been obvious to one of ordinary skill in the art at the time of invention to provide lower jaws with small blades, as taught by

Blocher, to Nichols since it was known in the art that more surface area is covered in using multiple jaws to manipulate tissue before cutting or suturing.

Geiges, Jr. teaches a forceps instrument with a press unit **23** disposed on the forceps body and manually pressable to move between a pulled position and a not pulled position, two second tracking members **40, 41** and a third tracking member **37** all disposed in the barrel and slidable within the barrel, rear ends of the two second tracking members and the third tracking members being connected with the press unit, whereby when pressing the press unit, the second and third tracking members are moved rearward, with the second tracking member being first tracked and then the third tracking member, a middle of a pull member (rear of clamp **K**) being connected with front end of the third tracking member, two ends of the pull member being respectively positioned on rear sides of the two lower jaws in certain positions, whereby the pull member can be pulled by the third tracking member to displace, when the press unit is pressed, the press unit retracting the two second tracking members into the barrel, and when the press unit is located in the pulled position, the press unit retracting the third tracking member and pulling the pull member rearwardly (Figures 3, 5, 8, 12 and col. 5, lines 17-29). It would have been obvious to one of ordinary skill in the art at the time of invention to provide a press unit with tracking members, as taught by Geiges, Jr., to Nichols since it was known in the art that press units with tracking members facilitates the surgeon's manipulation of ligatures with a single pull force as opposed to time-consuming adjusting mechanisms or two-handed operation.

Claim 3: Nichols discloses the movable handle being formed with a through hole aligned with the rear end of the barrel, the rear end of the first link being pivotally connected in the through hole (Figure 1).

Claim 4: Nichols, Burbank, Blocher, Yoon '112 and Geiges, Jr. disclose the claimed device including the movable handle being formed with a through hole aligned with the rear end of the barrel (Figure 1, Nichols), except for the rear end of the second link extending through the through hole and protruding from rear side of the movable handle, a resilient member being disposed between the rear end of the second link and the movable handle, whereby when no external force is applied to the second link, the second link keeps in a rearward position.

Yoon '949 teaches the rear end of the second link extending through the through hole and protruding from rear side of the movable handle, a resilient member being disposed between the rear end of the second link and the movable handle, whereby when no external force is applied to the second link, the second link keeps in a rearward position (Figure 2, Figure 9, col. 3, lines 30-32, col. 4, lines 65-67 to col. 5, lines 1-3, and col. 7, lines 39-57). It would have been obvious to one of ordinary skill in the art at the time of invention to provide the second link being kept in a rearward position, as taught by Yoon '949, to Nichols, Burbank, Yoon '112, Blocher, and Geiges, Jr. since it was known in the art that undesirable deployment of cutting devices is dangerous and therefore are often kept biased in a retracted, safety position by a resilient member.

Claim 5: Nichols, Burbank, Yoon '112, Blocher, and Geiges, Jr. disclose a fissure being axially formed on the front end of the first link and inward extends from the front end thereof, the fissure being aligned with the gap between the two pairs of jaws (Figures 4-5), except for the blade being received in the fissure and displaceable within the fissure and the gap between the two pairs of jaws.

Yoon '949 teaches a blade being received in the fissure and displaceable within the fissure and the gap between the two pairs of jaws (Figure 9, col. 3, lines 30-32, col. 4, lines 65-67 to col. 5, lines 1-3, and col. 7, lines 39-57). It would have been obvious to one of ordinary skill in the art at the time of invention to provide a blade being received in the fissure and displaceable, as taught by Yoon '949, to Nichols, Burbank, Yoon '112, Blocher, and Geiges, Jr. since it was known in the art that the use of a displaceable cutter is common in that undesirable cutting can be prevented by being retractably slidable within a device.

Claim 7: Nichols, Yoon '949, Burbank, Yoon '112 and Blocher disclose the claimed device except for the press unit including a trigger and a lever.

Geiges, Jr. teaches a press unit **23** including a trigger and a lever **46**, the trigger being pivotally disposed on the forceps body and manually pullable between a pulled position and a not pulled position, the lever being disposed on the forceps body and swingable, whereby when the trigger is pulled, the lever is driven to displace, the rear ends of the two second tracking members being connected with the lever (Figures 3, 5, 8, 12 and col. 5, lines 17-29). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Nichols, Yoon '949, Burbank, Yoon

'112 and Blocher by providing a trigger and lever, as taught by Geiges, Jr., since it was known in the art that levers are commonly used in trigger mechanisms because its simplistic structure is relatively easy to manufacture and assemble within a device.

Claims 8-12: Nichols, Yoon '949, Burbank, Yoon '112 and Blocher disclose the claimed device including a notch **38** being formed on the circumference of the body section of a trigger; a secure pin **24** being pivotally disposed on the fixed handle and displaceable between a latching position and an unlatching position, whereby when the secure pin is positioned in the latching position, the secure pin hooks the notch of the trigger, while when the secure pin is positioned in the unlatching position, the secure pin unhooks the notch of the trigger (Figures 1 and 3, Nichols), except for the trigger having a body section and a pull arm connected with the body section, a cam section being formed on a circumference of the body section, a resilient member being disposed between a certain portion of the forceps body and the lever, a notch being formed on the circumference of the body section of the trigger position, and a connecting button displaceably disposed on the forceps body.

Geiges, Jr. teaches a trigger having a body section and a pull arm connected with the body section, a cam section **50** being formed on a circumference of the body section, the body section of the trigger being pivotally disposed on the fixed handle, whereby the trigger can be rotated, the pull arm being for manually shifting, the lever **46** being positioned behind the trigger, whereby when the trigger is positioned in the pulled position, the cam section rearward pushes the lever, a resilient member **26A** being disposed between a certain portion of the forceps body and the lever, whereby when no

external force is applied to the lever, the lever keeps in a forward leaning state, after pressing the trigger, the trigger drives and moves the lever to pull and displace the third tracking member, a connecting button (front end of element 23) displaceably disposed on the forceps body, whereby when the trigger is pulled, the connecting button is driven and moved, the rear end of the third tracking member being connected with the connecting body, the connecting button being up and down movable on the fixed handle and positioned right under the trigger, whereby the connecting button can be driven and displaced by the trigger (Figures 3, 5, 8, 12 and col. 5, lines 17-47). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Nichols, Yoon '949, Burbank, Yoon '112 and Blocher by providing the above limitations, as taught by Geiges, Jr., since it was known in the art that a cam mechanism, in combination with a trigger and lever are well known in the art for a simple transfer of the forces with a single pull force as opposed to time-consuming adjusting mechanisms or two-handed operation.

Claims 13-14: Nichols, Yoon '949, Burbank, Yoon '112 and Geiges, Jr. disclose the claimed device except for the outer side of rear end of each lower jaw being formed with an inward extending small fissure, the small blade being disposed in the small fissure, and having a protective jacket being disposed at outer end of each small blade.

Blocher teaches an outer side of rear end of each lower jaw being formed with an inward extending small fissure, the small blade being disposed in the small fissure, and having a protective jacket (metal) being disposed at outer end of each small blade (Figures 5-6). It would have been obvious to one of ordinary skill in the art at the time of

invention to provide the inward extending small fissure with a small blade disposed within it, as taught by Blocher, to Nichols, Yoon '949, Burbank, Yoon '112 and Geiges, Jr. since it was known in the art that it is desirable to cut tissue after being grasped with jaws which eliminates the need for a separate cutting device.

Claim 16: Nichols, Yoon '949, Burbank, Yoon '112 and Geiges, Jr. disclose the claimed device except for the two lower jaws being integrally formed at front of a bar member fixedly disposed in the barrel.

Blocher teaches two lower jaws being integrally formed at front of a bar member fixedly disposed in the barrel (Figures 2-3). It would have been obvious to one of ordinary skill in the art at the time of invention to provide two lower jaws being integrally formed at front of a bar member, as taught by Blocher, to Nichols, Yoon '949, Burbank, Yoon '112 and Geiges, Jr. since it was known in the art that bar members are easily displaceable, or slidable, within barrels of elongate devices with forceps, and therefore manipulate distal jaw members.

Claim 21: Nichols discloses two slots being formed on two sides of the circumference of a middle section of the barrel, two splits being formed on two sides of the front end of the barrel (Figures 4-5).

9. Claims 2, 15 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nichols** (U.S. Patent No. **5,843,099**), **Yoon' 949** (U.S. Patent No. **5,542,949**), **Burbank** (U.S. Patent No. **6,635,065**), **Yoon '112** (U.S. Patent No. **5,728,112**), **Blocher**

(U.S. Patent No. **6,520,960**), and **Geiges, Jr.** (U.S. Patent No. **5,830,231**), as applied to Claim 1 above, and further in view of **Yoon' 943** (U.S. Patent No. **5,704,943**).

Claims 2 and 15: Nichols, Yoon '949, Burbank, Yoon '112, Blocher, and Geiges, Jr. disclose the claimed device except for two loop ligatures, the bottom face of the rear end of each lower jaw being formed with a guide channel, the pull member being flexible, two ends of the pull member being respectively conducted through the guide channels and reversely upward folded through outer sides of the two lower jaws to respectively connect with the sutures of the two loop ligatures ().

Yoon '943 teaches two loop ligatures **70**, each loop ligature being a slippery knot braided from a suture, the loop ligature including a loop, two segments outward extending from the loop and a knotted section **74** braided from the two segments and adjacent to the loop, the knotted section being slippery, whereby when tracking a first segment of the loop ligature, the size of the loop is minified, while when tracking a second segment of the loop ligature, the knotted section is converted into a secure knot, the loops of the loop ligatures being wound along the peripheries of the upper and lower jaws, an end of the first segment being connected with front end of each first tracking member, an end of the second segment being connected with front end of each second tracking member, two ends of the pull member being respectively connected with the two segments of each loop ligature, whereby when the pull member is pulled, the two segments of the loop ligature are driven to move toward the small blades to be cut off by the small blades, the bottom face of the rear end of each lower jaw being formed with a guide channel, the pull member being flexible, two ends of the pull member being

respectively conducted through the guide channels and reversely upward folded through outer sides of the two lower jaws to respectively connect with the sutures of the two loop ligatures (Figures 1-6). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the combined device of Nichols, Yoon '949, Burbank, Yoon '112, Blocher, and Geiges, Jr. by providing two loop ligatures, as taught by Yoon '943, in order to avoid tedious, complex surgery in making a plurality of ligature loops without withdrawal of the ligating instrument from the body (col. 2, lines 1-4).

Claims 17-20: Nichols, Yoon '949, Burbank, Yoon '112, Blocher, and Geiges, Jr. disclose the claimed device except for the front end of each lower jaw being formed with a recess, the front edge of outer side of each lower jaw being formed with a small groove near the recess, two steel plates being respectively fixedly disposed at front ends of the two lower jaws, a locating member, two ends of the locating member being respectively formed with two hook sections, the locating member being disposed at rear end of top face of each lower jaw near the pivot joint, two sides of the loop of each loop ligature being respectively hooked with the hook sections of the locating member, and an insertion dent.

Yoon '943 teaches a front end of each lower jaw being formed with a recess which is slightly larger than the volume of the knotted section of the loop ligature, the front edge of outer side of each lower jaw being formed with a small groove near the recess, the small groove being slightly larger than the diameter of the suture, two steel plates being respectively fixedly disposed at front ends of the two lower jaws, each steel plate having a through hole corresponding to the recess, a locating member, two ends of the

locating member being respectively formed with two hook sections, the locating member being disposed at rear end of top face of each lower jaw near the pivot joint, two sides of the loop of each loop ligature being respectively hooked with the hook sections of the locating member, and an insertion dent being formed on rear end of top face of the lower jaw and the locating member being inlaid in an insertion dent (Figures 1 and 12). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the combined device of Nichols, Yoon '949, Burbank, Yoon '112, Blocher, and Geiges, Jr. by providing the above limitations, as taught by Yoon '943, since it was known in the art that forming multiple loop ligatures without withdrawal of the ligating instrument from the body facilitates use for surgeons.

Response to Arguments

2. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diane Yabut whose telephone number is (571) 272-6831. The examiner can normally be reached on M-F: 9AM-4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Hayes can be reached on (571) 272-4959. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/642,782
Art Unit: 3734

Page 15

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DY

A handwritten signature in black ink, appearing to read "M. J. Hayes", with a stylized, cursive script.

MICHAEL J. HAYES
SUPERVISORY PATENT EXAMINER